

In the Specification

On page 15, please replace the first full paragraph with the following:

Instead of the CYS requirement, the non-oriented electrical steel sheet according to one of the above (1) to (5) may satisfy requirement in which the tensile strength is not less than CTS (MPa) represented by the following formula 2:

note

$$\text{CTS} = 5,600 [\%C] + 87 [\%Si] + 15 [\%Mn] + 70 [\%Al] + 430 [\%P] + 37 [\%Ni] + 22d^{-1/2} + 230 \dots (\text{Formula 2})$$

where d is an average grain diameter (mm) of crystal grains.

On page 21, please replace the first two full paragraphs with the following:

(12) In the method for manufacturing ~~a high-strength~~ an age-hardenable non-oriented electrical steel sheet, according to the above (10) or (11), instead of the “Cu solid solution temperature”, Ts (°C) represented by the following formula 2 is used:

~~N~~note

$$T_s (^\circ\text{C}) = 3,351 / (3.279 - \log_{10}[\%C]) - 273 \dots (\text{Formula 2})$$

(13) In the method for manufacturing an age-hardenable non-oriented electrical steel sheet having superior punchabilities and magnetic properties, according to any one of the above ~~(11)~~ (10) to (12), the steel slab further contains at least one of Zr, V, Sb, Sn, Ge, B, Ca, a rare earth element, and Co,

wherein the content of each of Zr and V is 0.1% to 3%,

the content of each of Sb, Sn, and Ge is 0.002% to 0.5%,

the content of each of B, Ca, and the rare earth element is 0.001% to 0.01%, and

the content of Co is 0.2% to 5%.

On page 22, please replace the second full paragraph with the following:

Brief Description of the Drawings

Fig. 1 is a dark field image of precipitated Cu particles observed using a scanning transmission electron microscope (STEM), in which the Cu particles are obtained by finish annealing of 1.8% Si-1.0% Cu steel, followed by aging treatment at 500°C for 8 hours.

On page 35, please replace the first full paragraph with the following:

In addition, when the non-oriented electrical steel sheet of the present invention before the ~~age-effecting~~hardening treatment is processed by age-hardening treatment, the tensile strength (TS) (MPa) is preferably increased to not less than CTS represented by the following formula 3. The requirement described above can be approximately obtained when appropriate Cu precipitation after aging is performed by controlling the composition range and the states of solid solution and precipitation of Cu as described above.:

$$\text{CTS} = 5,600 [\%C] + 87 [\%Si] + 15 [\%Mn] + 70 [\%Al] + 430 [\%P] + 37 [\%Ni] + 22d^{-1/2} + 230 \dots \text{(Formula 3)}$$

Please replace the paragraph spanning pages 40 and 41 with the following:

In addition, the tensile strength TS (MPa) of the steel sheet of the present invention after age-hardening treatment is preferably not less than ~~CYS~~CTS represented by the following formula 3.:

$$\text{CTS} = 5,600 [\%C] + 87 [\%Si] + 15 [\%Mn] + 70 [\%Al] + 430 [\%P] + 37 [\%Ni] + 22d^{-1/2} + 230 \dots \text{(Formula 3)}$$

On page 49, please replace the second full paragraph with the following:

In addition, preferably, by age-hardening treatment at least at 500°C for 10 hours, a steel sheet can be obtained having a strength not less than CYS (formula 1) or CTS (formula 23) described above and small decrease in iron loss.

Please replace the paragraph spanning pages 52 and 53 with the following:

In this evaluation, as described above, the average crystal grain diameter d was obtained as the circle-base diameter by observation of a cross section of the steel sheet using an optical microscope. In addition, the iron loss was measured in accordance with JIS C2550 by an Epstein method using samples obtained along the rolling direction and direction perpendicular thereto, the number of samples in the individual directions being equal to each other. In addition, the punchabilities were measured by the number of ring-shaped samples (~~outside~~inside diameter of 20 mm \times outside diameter of 30 mm) punched out from the steel sheet at which a burr height thereof reached 30 μm . The yield strengths were measured along the rolling direction and the direction perpendicular thereto of the steel sheet using a tensile test (at a cross-head speed of 10 mm/min) and were averaged as the yield strength.

On page 56, please replace Table 2 with the Table 2 attached on a separate sheet.

On page 70, please replace the first paragraph with the following:

As can be seen from the table and figures, steel C showed superior magnetic properties and a high strength at a relatively high cooling rate (steel sheets Nos. 18 and 19) of 10°C/s or more; however, at a cooling rate of less than 10°C/s ~~or less~~, the iron loss was degraded, and the strength was liable to decrease. On the other hand, in steel J of the example containing an appropriate amount of Ni in addition to Cu, as can be seen from the results of steel sheets Nos. 22 to 25, superior magnetic properties and a high strength could be stably and simultaneously obtained under various cooling-rate conditions.